What is claimed:

1. A storage device with variable storage capacity, the storage device comprising:

an input area;

an output area;

a continuous conveying element connecting the input area to the output area;

the continuous conveying element being guided by guide elements in a looping manner from the input area to the output area, whereby the continuous conveying element defines a multi-layered storage area adapted to store products and a multi-layered return area adapted to be free of products;

the multi-layered storage and return areas being arranged side by side and changing in length depending on a state of fullness of the storage device while an overall length of the continuous conveying element remains generally constant; and

at least one storage layer of the multi-layered storage area and at least one storage layer of the multi-layered return area being arranged on a common horizontal plane.

2. The device of claim 1, wherein the storage device is adapted to store rod-shaped products.

3. The device of claim 1, wherein the storage device functions on a first in – first out manner.

4. The device of claim 1, wherein the multi-layered storage area comprises a full strand.

5. The device of claim 1, wherein the multi-layered return area comprises an empty strand.

6. The device of claim 1, wherein each storage layer of the multi-layered storage area and each storage layer of the multi-layered return area is arranged on a common horizontal plane.

7. The device of claim 1, wherein the multi-layered storage area and the multi-layered return area comprise separate guide elements.

8. The device of claim 1, wherein the guide elements of the multi-layered storage area are arranged on two disc towers.

9. The device of claim 8, wherein each of the two disc towers comprise a plurality of rotatably mounted storage discs arranged on a vertical spindle.

10. The device of claim 9, wherein at least one of the two disc towers can move relative to the other of the two disc towers.

11. The device of claim 9, wherein a first of the two disc towers is a stationary disc tower and a second of the two disc towers is a linearly movable disc tower.

12. The device of claim 11, wherein the second disc tower is movable along a generally horizontal plane.

13. The device of claim 1, wherein at least some of the guide elements are arranged on the multi-layered return area and are mounted on two plate towers.

14. The device of claim 13, wherein each of the two plate towers comprise a plurality of rotatably mounted plates arranged on a vertical spindle.

15. The device of claim 14, wherein at least one of the two plate towers is movably mounted.

16. The device of claim 14, wherein each of the two plate towers is movable along a generally horizontal plane.

17. The device of claim 1, further comprising a movable common slide unit comprising a plurality of plate towers a disc tower.

18. The device of claim 17, wherein each plate tower comprises a plurality of plates and the disc tower comprises a plurality of storage discs.

19. The device of claim 18, wherein each of the plurality of plates comprises a diameter that is substantially smaller than a diameter of the plurality of storage discs.

20. The device of claim 1, wherein at least some of the guide element comprise a plurality of stationary rotatably mounted reversing rollers.

21. The device of claim 20, wherein each of the plurality of stationary rotatably mounted reversing rollers is mounted on a horizontal spindle.

22. The device of claim 1, wherein the continuous conveying element comprises a continuous chain.

23. The device of claim 1, further comprising a drive for driving the continuous conveying element, wherein the drive is arranged in the input area.

24. The device of claim 1, further comprising a drive for driving the continuous conveying element, wherein the drive is arranged in the output area.

25. The device of claim 1, further comprising a first drive for driving the continuous conveying element arranged in the input area and a second drive for driving the continuous conveying element arranged in the output area.

26. The device of claim 1, wherein the guide elements comprise a movable disc tower and an inlet disc arranged above a stationary disc tower and an outlet disc, wherein a diameter of the inlet disc is greater than a diameter of the outlet disc, and wherein the diameter of the outlet disc is greater than a diameter of storage discs of each of the movable and stationary disc towers.

27. The device of claim 1, wherein the guide elements comprise an inlet disc arranged above a stationary disc tower and an outlet disc, wherein a diameter of the inlet disc is greater than a diameter of the outlet disc, and wherein the diameter of the outlet disc is greater than a diameter of storage discs of the stationary disc tower.

28. The device of claim 27, wherein the storage discs of the stationary disc tower, the inlet disc and the outlet disc are inclined at an angle relative to a generally horizontal plane.

29. The device of claim 28, wherein the angle comprises approximately 3.5 degrees.

30. The device of claim 1, wherein the guide elements comprise a stationary disc tower, a movable disc tower, and a plurality of plate towers supported on spindles.

31. The device of claim 1, further comprising guide sheets, wherein the continuous conveying element is guided along two longitudinal sides of the storage device via the guide sheets.

32. The device of claim 1, further comprising a system for varying the length of the multi-layered storage area and the multi-layered return area, whereby the system is adapted to vary a storage capacity of the storage device.

33. The device of claim 32, wherein the system is adapted to vary the storage capacity automatically.

34. The device of claim 32, wherein the system regulates a difference in speed between a drive arranged in the input area and a drive arranged in the output area.

35. The device of claim 1, further comprising at least one tensioning system adapted to tension the continuous conveying element.

36. The device of claim 35, wherein the at least one tensioning system comprises a frame, a tensioning bar, a weight, a tension member, a tensioning roller, and a reversing roller.

37. A method of storing rod-shaped products using the device of claim 1, the method comprising;

feeding the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element; and

guiding the continuous conveying element with the guide elements to the output area.

38. A method of conveying rod-shaped products between a first machine and a second machine using the device of claim 1, the method comprising;

feeding, from the first machine, the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element;

guiding the continuous conveying element with the guide elements to the output area; and

feeding, from the output area, the rod-shaped products to the second machine.

39. A method of conveying rod-shaped products between a cigarette making machine and a cigarette packing machine using the device of claim 1, the method comprising;

feeding, from the cigarette making machine, the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element;

guiding the continuous conveying element with the guide elements to the output area; and

feeding, from the output area, the rod-shaped products to the cigarette packing machine.

40. A storage device with variable storage capacity, the storage device comprising:

a frame comprising longitudinal members;

a stationary disc tower comprising a spindle and a plurality of storage discs;

a movable disc tower comprising a spindle and a plurality of storage discs;

a plurality of reversing rollers;

an input area arranged adjacent an input disc;

an output area arranged adjacent an output disc;

a continuous conveying element that is guided by each of the storage discs of the stationary and movable disc towers, the reversing rollers, and the input and output discs; and

the continuous conveying element being guided in a looping manner from the input area to the output area, whereby the continuous conveying element defines a multi-layered storage area adapted to store products and a multi-layered return area adapted to be free of products.

41. The device of claim 40, wherein the multi-layered storage and return areas are arranged side by side and change in length depending on a state of fullness of the storage device while an overall length of the continuous conveying element remains generally constant.

42. The device of claim 40, wherein at least one storage layer of the multi-layered storage area and at least one storage layer of the multi-layered return area are arranged on a common horizontal plane.

43. A method of storing rod-shaped products using the device of claim 40, the method comprising;

feeding the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element; and

guiding the continuous conveying element with the guide elements to the output area.

44. A method of conveying rod-shaped products between a first machine and a second machine using the device of claim 40, the method comprising;

feeding, from the first machine, the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element;

guiding the continuous conveying element with the guide elements to the output area; and

feeding, from the output area, the rod-shaped products to the second machine.

45. A method of conveying rod-shaped products between a cigarette making machine and a cigarette packing machine using the device of claim 40, the method comprising;

feeding, from the cigarette making machine, the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element;

guiding the continuous conveying element with the guide elements to the output area; and

feeding, from the output area, the rod-shaped products to the cigarette packing machine.

46. A storage device with variable storage capacity, the storage device comprising:

a frame comprising longitudinal members arranged generally parallel to one another, a first end and a second end;

a stationary disc tower arranged in an area of the first end of the frame and comprising a spindle and a plurality of storage discs;

a plurality of reversing rollers arranged in an area of the second end of the frame;

a movable disc tower arranged between the first and second ends of the frame and comprising a spindle and a plurality of storage discs;

an input area arranged adjacent an input disc;

an output area arranged adjacent an output disc;

a continuous conveying element that is guided by each of the storage discs of the stationary and movable disc towers, the reversing rollers, and the input and output discs; and

a system for controlling a sliding movement of the movable disc tower,

wherein the continuous conveying element is guided in a looping manner from the input area to the output area, whereby the continuous conveying element defines a multi-layered storage area adapted to store products and a multi-layered return area adapted to be free of products.

47. The device of claim 46, wherein the multi-layered storage and return areas are arranged side by side and change in length depending on a state of fullness of the storage device while an overall length of the continuous conveying element remains generally constant.

48. The device of claim 46, wherein at least one storage layer of the multi-layered storage area and at least one storage layer of the multi-layered return area are arranged on a common horizontal plane.

49. A method of storing rod-shaped products using the device of claim 46, the method comprising;

feeding the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element; and

guiding the continuous conveying element with the guide elements to the output area.

50. A method of conveying rod-shaped products between a first machine and a second machine using the device of claim 46, the method comprising;

feeding, from the first machine, the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element;

guiding the continuous conveying element with the guide elements to the output area; and

feeding, from the output area, the rod-shaped products to the second machine.

51. A method of conveying rod-shaped products between a cigarette making machine and a cigarette packing machine using the device of claim 46, the method comprising;

feeding, from the cigarette making machine, the rod-shaped products to the input area;

positioning the rod-shaped articles onto the continuous conveying element;

guiding the continuous conveying element with the guide elements to the output area; and

feeding, from the output area, the rod-shaped products to the cigarette packing machine.